Please substitute the following amended claim 5 for the existing claim 5:

C2

5 (Amended). The process of Claim 1 wherein the substantially inert matrix material comprises silica, clay or mixtures thereof.

Marked-up versions of the existing claims 1 and 5 showing the changes incorporated in the amended claims are attached on a separate sheet.

REMARKS

It is believed, for the reasons set out below, that the amendments now to be entered in the claims overcome the objections raised in the Final Rejection mailed October 10, 2000 and the Advisory Action mailed December 19, 2000. Reconsideration of this application is therefore respectfully requested.

By the present amendments, claim 1 is limited to the catalyst containing less than 20 wt% of active matrix material, support for which limitation can be found on page 10, lines 26-28. Claim 5 has been amended so as to be consistent with the amended claim 1. It is therefore submitted that no new subject matter is added by the present amendments.

Claims 1-10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ladwig et al I (U.S. Patent No. 6,069,287) in view of Adewuyi et al (U.S. Patent No. 5,997,718). This rejection is respectfully traversed and reconsideration is requested.

Thus Ladwig et al disclose a process for selectively producing C_2-C_4 olefins from a catalytically cracked naphtha by contacting the naphtha with catalyst comprising a medium pore zeolite, such as ZSM-5 or ZSM-11, and an inorganic matrix, wherein the matrix may be modified with phosphorus. Although Ladwig et al are silent as to treating the zeolite component of the catalyst with phosphorus, the Examiner argues that such

treatment is obvious in view of the teaching in Adewuyi et al to add phosphorus to a ZSM-5 FCC additive to stabilize and resist attrition of the additive, as well as to improve activity retention. Although Applicant's believe that it would not be obvious in the sense of 35 U.S.C. § 103(a) to combine Ladwig et al and Adewuyi et al in the manner required to arrive at the existing claim 1, the claim is now to be amended to require that the catalyst contains less than 20 wt% of active matrix material. It is respectfully submitted this amendment provides a patentable distinction over the disclosure in Ladwig et al and Adewuyi et al.

With regard to Ladwig et al, it is of course noted that column 4, lines 26 to 34 disclose that the inorganic oxide matrix used to hold together the catalyst components is not catalytically active. However, lines 35 to 42 of column 4 teach that the catalyst preferably contains separate alumina phases which, as stated on page 10, line 25 to page 11, line 2 of the present specification, are the type of active materials which are controlled at low levels in the process of the invention. It is respectfully submitted that it would be contrary to the teaching of Ladwig et al to control the active alumina level at less than 20 wt%. Moreover, this difference leads to an important distinction over the process in Ladwig et al in that the use of the catalyst of the invention allows the production of light olefins in which the ethylene yield is enhanced. Thus, as disclosed in column 4, lines 60 to 64, the process of Ladwig et al preferably produces a propylene/total C_2 weight ratio in excess of 3.5, whereas the process of the present invention selectively produces ethylene such that the ethylene/propylene weight ratio is preferably greater than 0.39 (claim 7) and more preferably greater than 0.6 (claim 9). This is reflected in the Examples of the present application where ethylene yields as high as 16.3 wt% are obtained, as compared with the highest ethylene yield cited in the Ladwig et al Examples of 6.97 wt%.

Adewuyi et al are silent as to the activity of any matrix materials employed in the ZSM-5 additive and it is therefore respectfully submitted that it would not be obvious to arrive at the amended claim 1 by combining the disclosures of Ladwig et al and Adewuyi et al.

Entry of this Preliminary Amendment and allowance of this application are earnestly solicited.

Respectfully submitted,

By_____

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The following changes are being made to claims 1 and 5:

1 (Twice amended). A process for converting a C_4+ naphtha hydrocarbon feed to a product which includes light olefins and aromatics, comprising:

contacting said feed with a catalyst comprising zeolite ZSM-5, ZSM-11 or combinations thereof treated with a phosphorus-containing compound, and a substantially inert matrix material, wherein said catalyst contains less than 20 wt% of active matrix material, said contacting being effected under conditions to produce a product containing light olefins and aromatics.

5 (Amended). The process of Claim 1 wherein the substantially inert matrix material comprises silica, clay or mixtures thereof [and said matrix material contains less than 20 wt% of active matrix material].